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A NEW LIZARD OF THE GENUS *EMOIA*
(SCINCIDAE) FROM THE MARIANAS ISLANDS

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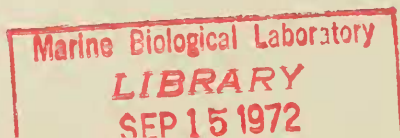
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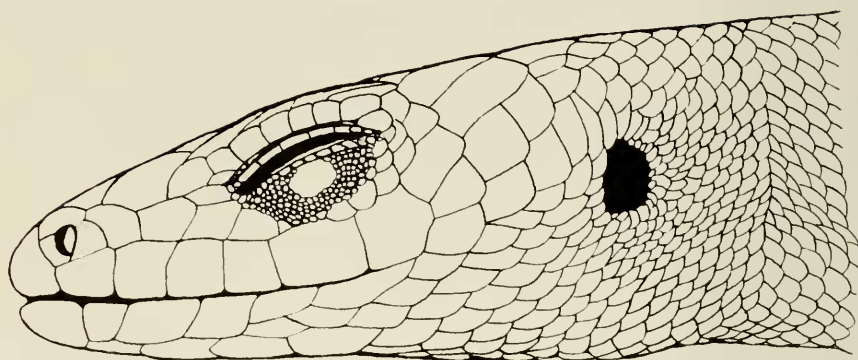
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INTRODUCTION

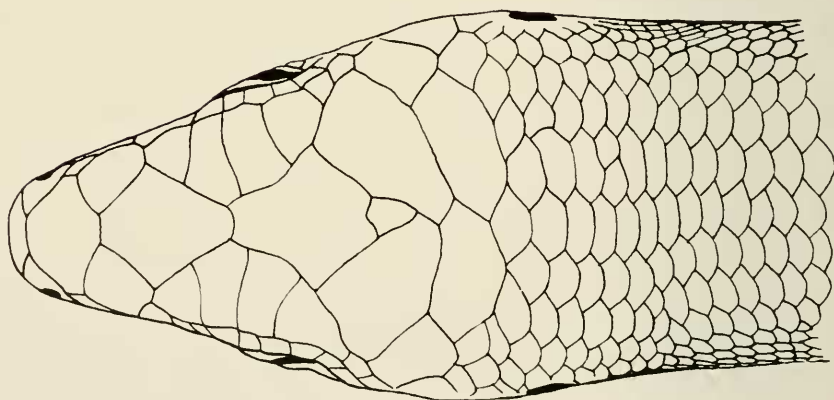
Brown (1956) recognized eight species of the Papuan-Oriental genus of lizards, *Emoia*, as occurring in Micronesia. Two were noted as apparently undescribed, of which one, a moderate-sized species, was represented by only four specimens from the Marianas Islands in the northwestern part of Micronesia. One of us (the junior author) has recently obtained a large series of the species from the same island group, and this larger sample permits a more adequate diagnosis of the species. It apparently has its closest affinities with *Emoia boettgeri* (Sternfeld) from central and eastern Micronesia and with *Emoia arnoensis* Brown and Marshall from the Marshall Islands in eastern Micronesia. *Emoia atrocostata* (Lesson), a widely distributed species-complex in the western Pacific basin; *Emoia flavigularis* Schmidt from the Solomon Islands to the south; and the very large *Emoia nigra* Jacquinet and Guichenot, the range of which extends from the Solomon to the Tonga Islands in the southern Island chain, are also representatives of the same evolutionary group.

Measurements were made with a caliper to the nearest 0.1 mm. Middorsal scale rows were counted between the parietals and a point opposite the vent;





a



b

midbody scale rows at a point approximately equidistant between the fore and hind limbs; fourth-toe lamellae from that proximal rounded lamella which is at least two-thirds the breadth of the toe to the most distal ventral scale inclusive.

Emoia slevini Brown and Falanruw, new species.

HOLOTYPE. United States National Museum no. 192781, Cocos Island (a small island off the southern end of Guam), Marianas Islands, collected by M. V. C. Falanruw.

PARATYPES. United States National Museum nos. 122645–122646, Rota Island; 122470, Ritidain Point, Guam Island, collected by L. P. McElroy; 128028, Mt. Lasso, Tinian Islands, collected by H. K. Townes, Jr.; University of Guam nos. 547–552, 1305–1306, 1393–1395, 1448, 1450–1451; California Academy of Sciences nos. 129138–129143; Museum of Comparative Zoology, Harvard University no. 128164; Field Museum of Natural History no. 171832; and British Museum of Natural History no. 1971.1027, from the same locality as the holotype.

DIAGNOSIS. An *Emoia* species of moderately large size, 58–85 mm. in snout-vent length for 18 mature specimens; length of hind limb less than 50 percent of the snout-vent length; simply rounded lamellae on under surface of digits, numbering 30–37 beneath the longest toe; 34–38 midbody scale rows and 61–74 dorsal scale rows between parietals and base of tail (for a sample of 27 specimens); prefrontals separated by the frontal; frontoparietals distinct; interparietal moderate in size; ground color (in life) of dorsum and upper lateral surfaces light to dark brown with variable scattered dark and light flecks.

DESCRIPTION. An *Emoia* species of moderate size; snout-vent length of 6 mature females 63–75 mm., of 12 males 69–84 mm.; snout round-pointed, of moderate length (36–44 percent of head length); supranasals much broader anteriorly than posteriorly, in contact with the anterior loreal which is shorter and broader than the posterior; prefrontals not in contact (separated by the frontal which is in contact with the rostral); length of the frontal about equal to that of the fused frontoparietals; interparietal of moderate size, length about equal to breadth at the base to nearly one and one-half times as great; 4 or 5 supralabials anterior to the enlarged one beneath orbit; 4 supraoculars plus a small one posteriorly; a single pair of large nuchals (fig. 1), dorsal scales smooth; midbody scale rows 34–38 for twenty-eight specimens; transverse rows along the middorsal line from parietals to base of tail 61–74; number of rows across the nape from ear to ear 12; 30–37 smooth, rounded lamellae

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FIGURE 1. *Emoia slevini*. a. Lateral view of head of paratype; b. Dorsal view of head of paratype, CAS.

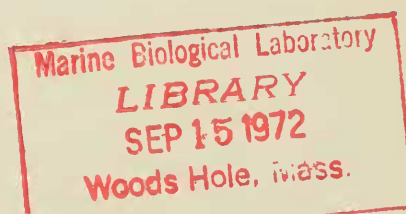


TABLE 1. Scale counts and pertinent measurements for species related to *Emoia slevini* (*R* = range, *M* = mean, *N* = number of specimens)

Characters		<i>E.</i> <i>arnoensis</i>	<i>E.</i> <i>atrocostata</i>	<i>E. b.</i> <i>boettgeri</i>	<i>E. b.</i> <i>orientalis</i>	<i>E.</i> <i>flavicularis</i>	<i>E.</i> <i>nigra</i>	<i>E.</i> <i>slevini</i>
Midbody scale rows	R	36-42	39-40	36-40	35-40	35-40	32-40	34-38
	M	38.3	39.9	38.4	38.5	37.9	37.1	36.5
	N	21	7	9	23	8	23	27
Fourth-toe lamellae	R	35-41	31-38	45-52	39-45	38-44	31-38	30-37
	M	39	33.6	47.1	42.6	41.3	34.5	33.1
	N	21	7	9	23	9	23	27
Scale rows from parietals to base of tail	R	67-74	64-70	65-74	65-77	56-62	60-66	61-74
	M	71.8	66.3	68.8	67.9	58.0	63.1	66.3
	N	21	7	8	22	9	23	27
Snout-vent length (mm.) of mature specimens	R	67-85	64-88	60-65	55-72	58-71	75-114	58-85
	N	17	4	6	23	6	50	18
Length of hind limb/snout-vent length	R	0.435-	0.458-	0.497-	0.476-			0.403-
		0.512	0.515	0.550	0.557			0.481
	M	0.480	0.489	0.523	0.523			0.440
	N	18	6	8	20			23

beneath the fourth toe for 27 specimens; limbs rather well developed, but hind limb less than 50 percent of the snout-vent length (table 1) and usually slightly less than distance from axilla to groin.

COLOR. The ground color dorsally (in life) is iridescent medium brown to dark brown with some darker flecks and occasionally light flecks, limbs, especially the hind limbs, often lighter with more numerous flecks; venter whitish to gray or cream anteriorly, more yellow posteriorly, sometimes orange about the vent; in recently preserved specimens the ground color is brown or somewhat reddish brown with scattered darker markings, in some specimens forming a vague pattern of narrow, broken, transverse bands. The yellow and orange of the venter fade rapidly in preservative.

ETYMOLOGY. The species is named for Mr. Joseph R. Slevin, former Curator of Amphibians and Reptiles at the California Academy of Sciences.

COMPARISONS. *Emoia slevini* is probably most closely related to *Emoia boettgeri* which occurs in the Caroline Islands. The two species are very similar in color pattern, but *E. slevini* differs from the latter primarily in the much lower number of subdigital lamellae, 31–38 (mean = 33) for 27 specimens, instead of 45–52 (mean = 47) for 6 specimens of *Emoia b. boettgeri* from the Caroline Islands, and the somewhat shorter hind limbs relative to snout-vent length, less than 50 percent (usually greater than 50 percent for *E. boettgeri*). *Emoia arnoensis* and *E. flavigularis* are also readily distinguished from *E. slevini* not only on the basis of very different color patterns, but also by the higher subdigital lamellar counts; for *E. flavigularis* the number of scale rows between the parietals and the base of the tail is usually less than 65, whereas it is usually greater than 65 for *E. slevini*; and the interparietal is usually fused with the parietals in *E. flavigularis*, or, if distinct, relatively small.

Of the group of related species noted in the Introduction, only *E. atrocostata* is sympatric with *E. slevini*. Populations of both species are represented in collections from Cocos Island, with 23 examples of *E. slevini* and two of *E. atrocostata*. Unfortunately this widespread species, described by Lesson (1830) on the basis of a unique specimen from Oualan (= Kusaie) Island in the eastern Carolines, is still poorly represented in collections from most islands of Micronesia and probably does not occur in the Marshall Islands, at least in the eastern part. The data for *E. atrocostata* presented in this paper are based upon two examples from Cocos Island and several specimens from Ulithi Atoll and the Palau Islands. Using the limited data from these two small samples of *E. atrocostata*, aside from totally unlike color patterns, *E. atrocostata* would appear to be most readily distinguished from *E. slevini* on the basis of the slightly greater number of midbody scale rows (table 1); the longer, narrower interparietal (length one and one-half to two times its basal breadth); and the posteriorly more broadly truncate rostral.

HABITAT. Based on observations of the population on Cocos Island, *E. slevini* is a forest species. The forest on this island is predominantly tall *Casuarina* trees with some scattered coconut and other broadleaf trees. The understory growth is sparse and the canopy permits only diffuse sunlight to mottle the forest floor. The forested area is bordered toward the lagoon by *Scaevola* shrubs. Most of the lizards observed were active on the forest floor. Occasionally specimens were seen in low hollows of tree trunks with only their heads protruding. Two were observed on the lower part of the trunk of *Casuarina* trees. In most instances escape was attempted by hiding under material on the forest floor. A few specimens were observed at the edges of the *Scaevola* shrubs.

Emoia atrocostata on Cocos Island, as elsewhere (Brown and Alcalá, 1967), occupies the various marginal beach areas or the open, often sparsely grassy or shrub-dotted areas adjacent to the beaches.

KEY TO THE SPECIES OF EMOIA IN THE MARIANAS

1. Lamellae beneath the fourth toe greatly thinned, more than 50 *E. cyanura*
Lamellae rounded, not thinned, less than 50 2
2. Midscale rows between the parietals and the base of tail less than 60; maturity attained at 45 mm. or less in snout-vent length *E. caeruleocauda*
Middorsal scale rows between the parietals and the base of tail greater than 60; maturity not attained at less than 45 mm., rarely less than 50 mm., in snout-vent length 3
3. Midbody scale rows 38 to 40; rostral broadly truncate posteriorly; dorsum grayish, greenish, or tan with black or dark brown spots; upper lateral surface marked by irregular black or dark brown band *E. atrocostata*
Midbody scale rows 34 to 38; rostral rounded or narrowly truncate posteriorly; dorsal and upper lateral surfaces brownish with scattered darker markings occasionally forming a vague pattern of narrow, broken, transverse bands *E. slevini*

ACKNOWLEDGMENTS

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